to conventional antiepileptic therapies for the last 3–12 years.

An 18-year-old woman had primary generalised tonic-clonic seizures for which she was unsuccessfully treated with carbamazepine and phenytoin. Before each seizure she experienced irritability and tremulousness which gave her warning of a fit. Changing the treatment to lamotrigine (200 mg per day) did not affect the seizure frequency, but fits now presented without aura—and this resulted in frequent injuries.

A 26-year-old man had complex partial seizures with frequent generalisation, poorly controlled by carbamazepine and valproate alone and in combination. Seizures were typically preceded by an abnormal epigastric sensation accompanied by an anxious feeling. After changing therapy to lamotrigine (150 mg per day) seizure frequency decreased by 40% but seizures were no longer preceded by aura.

A 31-year-old man had complex partial and secondary generalised tonic-clonic seizures. Conventional antiepileptic therapies (phenobarbitone, phenytoin, valproate, carbamazepine) alone and in combination had all been tried without satisfactory seizure control. Vertigo was invariably the warning manifestation of his seizures. After switching the treatment to lamotrigine (200 mg per day) there was no change in seizure frequency; however the seizures were no longer preceded by aura—so that he sustained two serious injuries.

All three patients were given lamotrigine in monotherapy and in doses as recommended by the manufacturer. Lamotrigine suppresses seizures by presynaptic inhibition via voltage-sensitive sodium channels, thereby preventing the release of excitatory neurotransmitters.[3] Evidence that loss of aura was lamotrigine-specific is provided by the fact that the same patients had aura with other agents that affect sodium channels, suggesting that lamotrigine exerts additional mechanisms of action. Aura, particularly in patients with refractory seizures, can be an important warning sign for an epileptic patient. Therefore, we recommend that practitioners should inform their patients about the possibility of loss of aura when prescribing or switching to lamotrigine.

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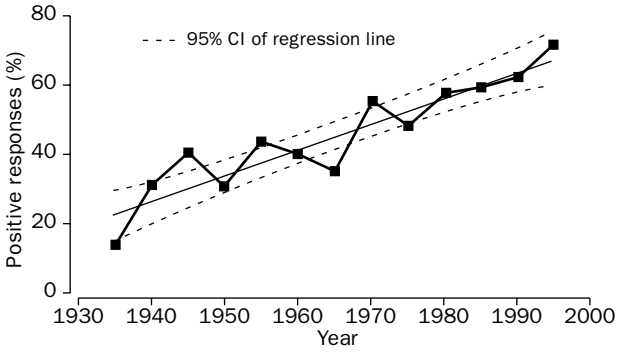
Half-life of truth in surgical literature

John C Hall, Cameron Platell

The hypothetico-deductive model of Karl Popper contends that "An assertion is true if it corresponds to, or agrees with, the facts".[1] Because "the facts" change over time, truth is relative. In this view of events, science progresses via a series of theories (paradigms) that are held to be true until they are replaced by a better approximation of reality.[2] It follows that some "truths" will last longer than others. We decided to estimate the half-life of dogma relating to the practice of surgery.



Regression analysis of combined responses of assessors
Score (%)=(date×0·747)−1422·4.

The journal *Surgery Gynecology and Obstetrics* had a section entitled International Surgical Abstracts that concluded at the end of 1994. We obtained copies of all of the abstracts for the even numbered months for each fifth year after 1935. The first 20 abstracts about general surgery from each of the 13 review periods were selected for study. The one sentence from each abstract that best summarised the conclusion was copied to a database. Editing of these sentences was restricted to the rephrasing of outdated terminology and the elimination of redundant words. The form, which contained the 260 selected sentences in a random order, was assessed by seven general surgeons. They were asked to mark each question as being either true or false.

We explored the relation between time and the number of positive responses from the questionnaire using scatter plots and regression analyses. The linear model detailed in the figure was found to be most appropriate (R^2=0·86, $p<0·001$). It suggests that the rate of loss of truth is 0·75% per year and that the estimated half-life of truth for clinical statements in the surgical literature is 45 years. This seems appropriate; 45 years ago it was suggested that: prefrontal lobotomy usefully altered patients' reactions so that "no anxiety, fear, or concern over their impending death from cancer was manifest"[3]; "in primary malignant hypertension the malignant phase may disappear" after lumbodorsal sympathectomy[4]; and, the detection of a gastric ulcer was "a strong indication for immediate operation".[5]

Extrapolation of the regression line can be used to hypothesise that the current era of surgery extends between 1904 and 2038. From an historical perspective, 1904 is a reasonable estimate of the commencement of the era of "open" surgery. Gauze masks and rubber gloves had just been introduced into operating theatres and abdominal surgery gained public respectability in the UK in 1902 when Edward VII's coronation was delayed by the need to drain his appendiceal abscess. More contentious is extrapolation of the regression line to predict the future. However, a nexus point for the present era of surgery in the second quartile of the next century is consistent with the current trend towards the ascendancy of minimally invasive procedures and medical treatments over open surgery.

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5 Ingelfinger FJ, Sanchez GC. Indications for surgery of the upper gastrointestinal tract. *N Engl J Med* 1950; **250:** 445–52.

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